NOTICE OF PROPOSED RULEMAKING

TITLE 12. NATURAL RESOURCES

CHAPTER 15. DEPARTMENT OF WATER RESOURCES

PREAMBLE

1.	**Sections Affected**	**Rulemaking Action**
	Article 13	Adopt
	R12-15-1301	Adopt
	R12-15-1302	Adopt
	R12-15-1303	Adopt
	R12-15-1304	Adopt
	R12-15-1305	Adopt
	R12-15-1306	Adopt
	R12-15-1307	Adopt
	R12-15-1308	Adopt

2. The specific statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statutes for R12-15-1301 through R12-15-1307: A.R.S. §§ 45-105(B)(1); 45-598(A); 45-834.01(B)(1).

Implementing statutes for R12-15-1301 through R12-15-1307: A.R.S. §§ 45-544(D), 45-559, 45-598, 45-599, 45-834.01, 45-1041(A)(4), 45-1052(4)

Authorizing statute for R12-15-1308: A.R.S. § 45-597(A)

Implementing statutes for R12-15-1308: A.R.S. §§ 45-544(C) and (D), 45-596, 45-597(A)

3. **A list of all previous notices appearing in the Register addressing the final rule:**

Notice of Rulemaking Docket Opening: 10 A.A.R. 1033, 19 March 2004

Notice of Rulemaking Docket Opening: 11 A.A.R. 1364, April 8, 2005

4. **The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

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5. **An explanation of the rule, including the agency's reasons for initiating the rule:**

Background

In 1980, the Arizona Legislature enacted the Groundwater Code, A.R.S. § 45-401, et seq., "to provide a framework for the comprehensive management and

regulation of the withdrawal, transportation, use, conservation and conveyance of rights to use the groundwater in this state." A.R.S. § 45-401(B). The main focus of the Groundwater Code is on the five areas of the state designated as active management areas ("AMA"), where the withdrawal and use of groundwater is extensively regulated. In AMAs, a person may withdraw groundwater from a non-exempt well (generally, a non-irrigation well having a pump with a maximum pump capacity of more than 35 gallons per minute or an irrigation well of any capacity) only if the person has a grandfathered groundwater right, a service area right or a groundwater withdrawal permit. Before constructing a new well or a replacement well in a new location in an AMA for the purpose of withdrawing groundwater pursuant to a grandfathered groundwater right, a service area right or a general industrial use permit, a person must apply for and obtain a well permit from the Arizona Department of Water Resources ("ADWR") pursuant to A.R.S. § 45-599.

The director of ADWR is required to "adopt rules governing the location of new wells and replacement wells in new locations in active management areas to prevent unreasonably increasing damage to surrounding land or other water users from the concentration of wells." A.R.S. § 45-598(A) (the rules are referred to herein as "well spacing rules"). One of the requirements for obtaining a well permit under A.R.S. § 45-599 is that the proposed well must comply with the well spacing rules adopted by the director pursuant to A.R.S. § 45-598(A). A.R.S. § 45-599(C).

The director is also required to adopt a rule defining what constitutes a replacement well, including the distance from the original well site that is deemed to be the same location for a replacement well. A.R.S. § 45-597(A). A person proposing to construct a replacement well in approximately the same location must file a notice of intention to drill with ADWR, but is not required to obtain a well permit or comply with the well spacing rules. *See* A.R.S. § 45-597(B).

To allow persons to obtain well permits prior to the adoption of final well spacing rules, the Legislature included a provision in the Groundwater Code that authorizes the director to "adopt temporary rules to allow a person to construct, replace or deepen a well prior to the adoption of final rules pursuant to this article." A.R.S. § 45-592(B). On March 11, 1983, the director adopted two temporary rules pursuant to this authority: R12-15-830, which contains criteria for determining whether a proposed well will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells; and R12-15-840, which establishes criteria that must be met in order for a proposed well to qualify as a replacement well in the approximately the same location. The temporary rules remain in effect today, as ADWR has not yet adopted final rules pursuant to A.R.S. §§ 45-597(A) and 45-598(A). The temporary rules are not codified in the Arizona Administrative Code, but are available for review at ADWR's website, www.azwater.gov (click on Laws and Rules).

The purpose of this rulemaking proceeding is to adopt final well spacing rules pursuant to A.R.S. § 45-598(A) and a final rule defining what constitutes a replacement well in approximately the same location pursuant to A.R.S. § 45-597(A). These rules will replace the temporary rules adopted in 1983. As explained above, the well spacing rules will apply to applications for well permits in AMAs under A.R.S. § 45-599. A person will not be allowed to construct a well for which a well permit is required unless the well complies with the well spacing rules.

In addition to applications for well permits under A.R.S. § 45-599, the well spacing rules will also apply to several categories of applications and well uses not mentioned in the temporary rules. These applications and well uses were made subject to the well spacing rules as a result of amendments to the Groundwater Code enacted after the temporary rules were adopted. The additional applications and well uses are the following:

1. An application for a recovery well permit under A.R.S. § 45-834.01 that is filed for a new well as defined in A.R.S. § 45-591 (generally, a non-exempt well drilled on or after June 12, 1980) or, except as provided in A.R.S. § 45-834.01(B)(2) or (3), for an existing well as defined in A.R.S. § 45-591 (generally, a non-exempt well drilled before June 12, 1980).
2. An application filed under A.R.S. § 45-559 for approval to use a well drilled after September 21, 1991 to withdraw groundwater for transportation to an AMA pursuant to title 45, chapter 2, article 8.1,

Arizona Revised Statutes ("A.R.S.").

3. An application for a water exchange permit under A.R.S. § 45-1041 filed by a person other than a city, town, private water company or irrigation district if there will be any new or increased pumping by the applicant from a well or wells in an AMA.

4. The use of a well to withdraw groundwater in the Little Colorado river plateau groundwater basin for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1), unless the well was constructed on or before September 21, 1991 or the well is a replacement well in approximately the same location as the original well.

5. The use of a well by a participant in a water exchange for which a notice of water exchange is filed under A.R.S. § 45-1051, except a city, town, private water company or irrigation district, if there will be any new or increased pumping by the participant from a well or wells in an AMA.

It is important to note that the proposed well spacing rules do not apply to the construction or use of the following types of groundwater wells within AMAs: (1) exempt wells (generally, non-irrigation wells with a maximum pumping capacity of 35 gallons per minute ("gpm") or less; and (2) wells drilled pursuant to a groundwater withdrawal permit other than a general industrial use permit (e.g., mineral extraction and metallurgical processing permits, drainage and dewatering permits and poor quality groundwater permits)

It is also important to note that the rules do not apply to the construction or use of a well to the extent that the well will pump surface water subflow. This is because the statutes requiring the director to adopt well spacing rules limit the applicability of the rules to withdrawals of groundwater or the recovery of stored water. *See* A.R.S. §§ 45-598 and 45-834.01(B)(1). Consequently, if a person proposes to construct a well that will pump only surface water subflow, and no groundwater or stored water, compliance with the well spacing rules will not be required in order to construct the well. However, the person's withdrawals of surface water subflow will be subject to the state's surface water laws, which require a decreed or appropriative surface water right.

ADWR recognizes that in some cases, the location of a proposed well may raise a question as to whether the well will pump groundwater or surface water. If a person applies for a well permit under A.R.S. § 45-599 (which applies only to non-exempt wells in AMAs that will pump groundwater), but the proximity of the proposed well to a stream raises a question as to whether the well will pump groundwater, ADWR will require the applicant to submit a hydrological study demonstrating that the well will pump groundwater. If ADWR determines from the applicant's hydrological study or other information that the well will pump groundwater, ADWR will process the application and grant the well permit if the proposed well complies with the well spacing rules and any other applicable requirements in A.R.S. § 45-599. If ADWR determines that the well will pump only surface water subflow, it will deny the application for a well permit on the

ground that the applicant does not qualify for a well permit under A.R.S. § 45-599 because the well will not pump groundwater. In that case, the applicant's right to use the well to withdraw surface water subflow will be governed by the state's surface water laws.

In developing the proposed well spacing rules, ADWR was guided by the statutory mandate that the rules be designed to prevent unreasonably increasing damage to surrounding land and other water users from the concentration of wells. The words "unreasonably increasing damage" indicates that the Legislature did not intend that the rules prevent *all* increasing damage that may result from a new well, only increasing damage that is considered to be *unreasonable*. In addition, ADWR was guided by the mandate in A.R.S. § 45-603 that in developing the rules, the director shall consider cones of depression, land subsidence and water quality. The proposed well spacing rules are designed to prevent unreasonably increasing damage caused by these factors. Finally, ADWR took into account the need for municipal water providers, agricultural water users and industrial water users to drill new wells to provide a sufficient supply of groundwater and/or recovered water to meet their water demands. ADWR believes that the proposed well spacing rules strike a proper balance between the needs of water users to drill new wells and the need to protect surrounding land and other water users from unreasonably increasing damage from the concentration of wells.

Description of Temporary Rules

As mentioned above, in 1983 the director of ADWR adopted a temporary rule establishing well spacing criteria for applications for well permits under A.R.S. § 45-599 and a temporary rule defining what constitutes a replacement well in approximately the same location. The rules remain in effect today, but will be replaced by the rules proposed in this rule making proceeding. The following is a brief description of the temporary rules.

R12-15-830. Well Spacing and Well Impact.

This rule sets forth the criteria the director must follow in determining whether an application for a well permit should be denied on the ground that the proposed well will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells. There are three categories of unreasonably increasing damage addressed in the rule: additional drawdown of water levels at neighboring wells of record; additional regional land subsidence; and migration of poor quality water. The rule requires an applicant for a permit to drill multiple wells or a well with a proposed design pumping capacity in excess of 500 gallons per minute to submit a hydrological study demonstrating the additional drawdown in surrounding water levels that will be caused by the well. The director is authorized to require any applicant to submit such a study.

R12-15-840. Replacement Wells in the Same Location.

This rule defines what constitutes a replacement well in approximately the same location. Such a well is not subject to the well spacing rule. Under this rule, a proposed well is considered to be a replacement well in approximately the same location if both of the following apply: (1) the proposed well will be located no greater than 660 feet from the original well it is replacing, and (2) the proposed well will not reasonably be expected to annually withdraw an amount of groundwater in excess of the historical withdrawals from the original well.

Rule Development Process

During its most recent five-year rule review, ADWR committed to the Governor's Regulatory Review Council ("GRRC") that it would commence a rulemaking proceeding to adopt permanent rules to replace the temporary rules. ADWR published a notice of rulemaking docket opening for the proposed rules on March 19, 2004. After the notice expired, ADWR published a second notice of rulemaking docket opening on April 8, 2005. ADWR invited water providers and other interested persons to participate in a stakeholders group to assist ADWR in developing the rules. The first meeting of the stakeholders group was on October 27, 2004. The stakeholders group met every three weeks after that for over a year. Persons representing a variety of interests attended the meetings, including representatives of municipal water providers, agricultural water users, industrial water users and landowners. The stakeholders group assisted ADWR in the evaluating the temporary rules, developing a list of topics to be discussed,

resolving issues related to the topics developed, and developing rule language.

During the stakeholders group meetings, it became apparent that only a few substantive changes would be made to the temporary rules. As mentioned above, one change was required by statute – expanding the scope of the rules to include applications and well uses that were made subject to the well spacing rules by statutory amendments enacted after the temporary rules were adopted. Conceptually, however, the well spacing criteria in the proposed rules remain essentially the same as the criteria in the temporary rules. There are at least two reasons for few substantial changes. First, over the last 23 years, no one has challenged the temporary rules on the ground that they do not adequately prevent unreasonably increasing damage to surrounding land or other water users from the concentration of wells. Second, the majority of the stakeholders indicated that they believe the rules should not be substantially changed. Water users have been operating under the temporary rules for a long time and have not experienced major problems with them.

During the stakeholders group meetings, multiple topics were discussed. Some topics discussed were not implemented into the rules. One issue involved wells that pump surface water subflow and the damages that may result to riparian areas and other surface water users from such pumping. As explained earlier, the relevant statutes do not allow the well spacing rules to be applied to the pumping

of surface water subflow. However, ADWR will implement certain processes outside of the well spacing rules to address these issues.

First, during ADWR's review of an application for a well permit under A.R.S. § 45-599, if there is a question as to whether the well will pump groundwater, ADWR will require the applicant to submit a hydrological study demonstrating whether the proposed well will pump groundwater. If, after reviewing the study and any other relevant information, ADWR determines that groundwater will be withdrawn from the well, ADWR will continue with its review of the application and apply the well spacing rules. If the study or other information shows that only surface water subflow will be withdrawn from the well, ADWR will deny the application and inform the applicant that the well is subject to the state's surface water laws.

In addition, a permit condition will be added to each well permit issued pursuant to A.R.S. § 45-599 explaining that the permit authorizes the permittee to construct a well for the withdrawal of groundwater pursuant to the permittee's groundwater right or permit and does not authorize the permittee to withdraw surface water from the well. The condition will state that if the permittee withdraws surface water from the well in any year, the permittee shall do so only pursuant to a decreed or appropriative surface water right and shall separately report in the annual report filed pursuant to A.R.S. § 45-632 the amount of groundwater and surface water withdrawn from the well.

ADWR will also establish a process for giving public notice of all applications for well permits filed under A.R.S. § 45-599. ADWR is not required by statute or rule to give public notice of such applications, and historically it has not done so. However, ADWR will begin posting notices of pending applications for well permits on its website. There will be no right to file an objection to an application, however, as the notice will be for information purposes only.

Meeting minutes from the stakeholders group meetings are available from:

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Explanation of Proposed Rules

The proposed rules will be located in a new article (Article 13) within title 12, chapter 15 of the Arizona Administrative Code. The well spacing rules are numbered R12-15-1302 through R12-15-1307. The rule defining what constitutes

a replacement well in approximately the same location is numbered R12-15-1308. Definitions of terms used in the rules are set forth in R12-15-1301.

There are few substantive differences between the temporary rules and the proposed rules. The proposed well spacing rules address the same three categories of unreasonably increasing damage that are addressed in the temporary rule: additional drawdown of water levels at neighboring wells of record; additional regional land subsidence; and migration of contaminated water. Although there are some differences in the manner in which these issues are addressed, ADWR does not believe that the differences are substantial. The proposed rule defining what constitutes a replacement well in approximately the same location is also substantially the same as the temporary rule. Under both rules, the maximum distance from the original well that is deemed to be the same location is 660 feet. However, the maximum amount of water that may be withdrawn from the replacement well is greater under the proposed rule.

One of the main differences between the temporary rule and the proposed rules is that the proposed rules apply to several applications and well uses not included in the temporary rules. This is because statutory amendments enacted after the temporary rules were adopted require ADWR to apply the well spacing requirements to these new applications and well uses. The well spacing criteria for the new applications and well uses are the same as the well spacing criteria for applications for well permits under A.R.S. § 45-599.

The following is an explanation of each proposed rule. Differences between the proposed rules and the temporary rules are noted.

R12-15-1301. Definitions

R12-15-1301 contains definitions of words and phrases used in proposed rules R12-15-1302 through R12-15-1308. The definitions in this rule differ from the definitions in the temporary rules in two respects. First, R12-15-1301 contains a number of definitions not included in the temporary rules. New definitions were added because of the addition of rules relating to applications and water uses not included in the temporary rules (i.e., recovery wells, wells used to transport groundwater and wells used in water exchanges). New definitions were also added to provide greater clarity in the proposed rules.

The second difference between the definitions in the proposed rule and the definitions in the temporary rules involves the definition of "well of record." Under the well spacing criteria in both rules, only wells of record are considered when determining whether a proposed well will cause unreasonably increasing damage to other wells. "Well of record" is defined in temporary rules as any well or proposed well not owned by the applicant for which a well registration or notice of intention to drill has been filed and has not expired or for which an application for a groundwater withdrawal permit or well permit has been received

by ADWR, except any application which has been rejected or for which the permit has expired. ADWR determined this definition is too broad because it includes wells that, because of the purpose for which they are used, would not be unreasonably impacted by an additional drawdown of water levels or the migration of contaminated water (e.g., injection wells and wells drilled for dewatering purposes).

The definition of "well of record" in the proposed rule excludes wells that would not be unreasonably damaged by an additional drawdown of water levels at the well. Wells excluded are wells drilled for the following purposes: cathodic protection; use as a sump pump or heat pump; air sparging; injection of liquids or gasses into the aquifer or vadose zone; monitoring water levels or water quality; obtaining geophysical, mineralogical or geotechnical data; grounding; soil vapor extraction; dewatering; drainage; temporary electrical energy generation; and hydrologic testing.

R12-15-1302. Well Spacing Requirements – Applications to Construct New Wells or Replacement Wells in New Locations Under A.R.S. § 45-599

Rule R12-15-1302 contains well spacing criteria for applications for well permits under A.R.S. § 45-599. A well permit is required to construct a new well or a replacement well in a new location within an AMA, pursuant to a grandfathered groundwater right, a service area right or a general industrial use permit.

Well spacing criteria

R12-15-1302(B) provides that the director shall deny an application for a well permit if the director determines that the proposed well will cause unreasonably increasing damage to surrounding land and other water users from the concentration of wells due to one of the following factors: additional drawdown of water levels at neighboring wells; additional regional land subsidence; or migration of contaminated water to a well of record. These three categories of unreasonably increasing damage are the same as the three categories addressed in the temporary well spacing rule. The following is an explanation of how each category is addressed in the proposed rule, including an explanation of how it compares to the temporary rule.

Additional drawdown at neighboring wells of record

Under both the proposed rule and the temporary rule, if the probable impact of the withdrawals from a proposed well on a well of record is an additional drawdown of 10 feet or less after the first five years of operation of the proposed well, the impact on the well of record is not considered to be an unreasonable impact. ADWR included the 10-foot, five-year criterion in the temporary rule because ADWR's hydrologists determined at that time that an additional drawdown of 10 feet or less over a five-year period was normal, and not an unreasonable impact.

However, an additional drawdown in excess of 10 feet over a five-year period was above normal, and therefore constituted unreasonably increasing damage.

ADWR's decision to retain the 10-foot, five-year criterion in the proposed rule is based on a study conducted by ADWR Hydrologists Frank Corkhill and Carol Norton dated March 30, 2005, entitled "Summary of Water Level Change Data in the Phoenix Active Management Area (1982/83 to 2002/03)." That study reviewed water level change data over the period from 1982 to 2003 and concluded that it is still appropriate to consider an additional drawdown of 10 feet or less over a five-year period to be normal and not unreasonable, and to consider an additional drawdown in excess of 10 feet over a five-year period to be above normal and therefore unreasonable.

Under the proposed rule, if the director determines that the probable impact of the withdrawals from a proposed well on a well of record will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well, the additional drawdown will be considered an unreasonable impact and the application for a permit to drill the well will be denied. R12-15-1302(B)(1). The rule includes an exception to this provision. R12-15-1302(D) provides that if the director determines that the probable impact of the withdrawals from a proposed well on a well of record will exceed 10 feet of additional drawdown over five years, the director shall notify the applicant of the name and address of the owner of the impacted well as shown in ADWR's well records. The director shall not

determine that the withdrawals from the proposed well will cause unreasonably increasing damage to the well of record on the basis of additional drawdown if, within 60 days from the date of the notice, or such longer period as allowed by the director, the applicant submits one of the following: (1) a signed consent form from the owner of the well of record consenting to the withdrawals; or (2) satisfactory evidence that the address of the owner of the well of record as shown in ADWR's well records is inaccurate, and that the applicant made a reasonable attempt to locate the owner of the well of record, but was unable to do so.

Under the temporary rule, if the director determines that the probable impact of the withdrawals from a proposed well on a well of record will be greater than 25 feet of additional drawdown over the first five years of operation of the well, the additional drawdown will be considered an unreasonable impact and the application to drill the well will be denied unless the applicant submits a consent form signed by the owner of the well of record consenting to the withdrawals. No exception is provided in cases where the owner of the well of record cannot be located. If the director determines that the probable impact of the withdrawals on a well of record will be greater than10 feet, but less than 25 feet, of additional drawdown over five years, the director may consider nine specified factors in determining whether the withdrawals from the proposed well will cause unreasonably increasing damage to the well of record. If the director determines that the withdrawals will cause unreasonably increasing damage, the well may

still be drilled if the applicant submits a signed consent form from the owner of the well of record.

The proposed rule does not include the provision authorizing the director to consider nine factors in determining whether the withdrawals from a proposed well will have an unreasonable impact on a well of record if the probable impact is an additional drawdown of between 10 and 25 feet over a five-year period. ADWR has found that the nine factors listed in the temporary rule are either too vague or impractical to use in determining whether withdrawals from a proposed well will cause unreasonably increasing damage to a well of record. For that reason, the proposed rule simply provides that the director shall deny the application if the probable impact of the withdrawals from the proposed well on a well of record will exceed 10 feet of additional drawdown after the first five years of operation of the proposed well, unless owner of the well of record consents to the withdrawals or cannot be located. R12-15-1302(B)(1). There was consensus among the stakeholders to take this approach in the proposed rule.

Another difference between the proposed rule and the temporary rule involves the submission of a hydrological study by the applicant. Under the temporary rule, if the application indicates a proposed design pumping capacity in excess of 500 gpm or proposes the drilling of multiple wells, the applicant must submit with the application a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts on water levels would exceed 10 feet

and 25 feet of additional drawdown after the first five years of operation of the proposed well or wells. The temporary rule also provides that the director may require any applicant to submit such a hydrological study.

The proposed rule does not require an applicant for a well permit to submit a hydrological study with the application regardless of the pumping capacity of the well or the number of proposed wells included in the application. This is because ADWR prepares its own hydrological study for each application and, in most cases, does not need a study from the applicant. However, R12-15-1302(B)(1) provides that the director may require an applicant to submit a hydrological study delineating those areas surrounding the proposed well in which the projected impacts on water levels would exceed 10 feet of additional drawdown after the first five years of operation of the proposed well if the director determines that the study will assist the director in making a determination under that subsection. The proposed rule also provides that an applicant may voluntarily submit such a study to the director. Id.

Additional regional land subsidence

The temporary rule provides that if the proposed well is located in an area of known land subsidence, the director shall deny the application for a well permit if the director determines that withdrawals from the proposed well "would cause an unreasonable and adverse impact from additional regional land subsidence." The

proposed rule is similar, but states that if the proposed well is in an area of known land subsidence, the director shall deny the application if the director determines that withdrawals from the well "will likely cause unreasonably increasing damage from additional regional land subsidence." R12-15-1302(B)(2). The word "likely" was added to the proposed rule because it may be impossible for ADWR to ever determine with absolute certainty that withdrawals from a proposed well "would cause" damage from additional land subsidence. The words "unreasonably increasing damage" are used in the proposed rule instead of "an unreasonable and adverse impact" because the relevant statutory language requires the director to adopt rules to prevent unreasonably increasing damage from the concentration of wells.

Under both the temporary and proposed rules, if the proposed well is located within an area of known land subsidence, the director may require the applicant to submit a hydrological study demonstrating the impact of the proposed well on additional regional land subsidence. The proposed rule also provides that the applicant may voluntarily submit such a study to the director. R12-15-1302(B)(2).

"Subsidence" is defined in the Groundwater Code as "the settling or lowering of the surface of land which results from the withdrawal of groundwater." A.R.S. § 45-402(36). ADWR has historically considered an area to be an "area of known land subsidence" if ADWR is aware that the area has experienced subsidence

through visual observations or through a review of maps, studies, GPS survey data collected by ADWR or survey data from other sources, vertical extensometer data or remote sensing data. ADWR works closely with the Arizona Geological Survey, the United States Geological Survey, the National Geodetic Survey, NASA and other governmental and private entities in the study of subsidence in Arizona. ADWR intends to continue this practice when implementing the proposed rule.

Whether withdrawals from a proposed well located in an area of known land subsidence will likely cause unreasonably increasing damage from additional regional land subsidence will be determined by ADWR on a case-by-case basis. This is necessary because the question of whether withdrawals from a well will likely cause additional regional land subsidence and, if so, whether the additional subsidence will likely cause unreasonably increasing damage, depends on the annual volume of the withdrawals from the proposed well and such site-specific factors as the hydrological and geographical conditions in the area and the presence of any structures in the area. ADWR has never denied an application on the basis that the proposed well will cause unreasonably increasing damage from additional regional land subsidence and will do so only in cases where it is clear that the proposed well will likely have such an effect.

Migration of contaminated water

Under the temporary rule, the director is required to deny the application for a well permit if the director determines that the proposed well would cause an unreasonable and adverse impact from the migration of poor quality water. ADWR has historically interpreted this provision to mean that the director shall deny an application for a well permit if the director determines that the proposed well would cause the migration of contaminated water from a remedial action site to a well of record, resulting in a degradation of the water withdrawn from the well of record to such an extent that it will no longer be usable for the purpose to which it is currently being used without additional treatment. ADWR has always consulted with the Arizona Department of Environmental Quality ("ADEQ") in making a determination under this provision.

This approach is carried forward in the proposed rule and made clearer. R12-15-1302(B)(3) provides that the director shall deny an application for a well permit if the director determines, after consulting with ADEQ, that withdrawals from the proposed well will likely cause the migration of contaminated groundwater from a remedial action site to a well of record resulting in a degradation of the quality of water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment. "Remedial action site" is defined as any of the following: (1) a CERCLA site regulated under United States Code §§ 9601, et seq.; (2) a DOD site regulated under 10 U.S.C. § 2701, et seq.; (3) a RCRA site regulated under 42 U.S.C. § 42-6901, et seq.; (4) a water quality assurance revolving fund ("WQARF") site

regulated under title 49, chapter 2, article 5, A.R.S., (5) a leaking underground storage tank ("LUST") site regulated under title 49, chapter 6, A.R.S., or (6) a voluntary remediation action site regulated under title 49, chapter 1, article 5, A.R.S. "Contaminated groundwater" is defined as groundwater that has been contaminated by a release of a hazardous substance, as defined in A.R.S. § 49-201, or a pollutant, as defined in A.R.S. § 49-201.

The proposed rule contains several exceptions that will allow a proposed well to be drilled even if the director determines that withdrawals from the well will likely caused the migration of contaminated groundwater to a well of record as described above. First, in order to deny an application for a well permit on this basis, the director must determine that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under title 49, A.R.S, or by the United States Environmental Protection Agency or the United States Department of Defense. R12-15-1302(B)(3). This means that an application for a well permit will not be denied in a case where the proposed well will likely cause the migration of contaminated groundwater to a well of record, but the damage to the owner of the well of record will be prevented or adequately mitigated by a remediation program or other program implemented under state or federal environmental laws. The temporary rule does not contain such a provision.

An additional exception was added to the proposed rule at the request of stakeholders. This exception provides that the director shall not determine that the withdrawals from a proposed well will cause unreasonably increasing damage to a well of record even though the withdrawals from the proposed well will impact a well of record in the manner described above if the applicant submits a signed consent form from the owner of the well of record consenting to the withdrawals from the proposed well or satisfactory evidence that the address of the owner of the well of record as shown in ADWR's well records is inaccurate and the applicant made a reasonable effort to locate the owner of the well but was unable to do so. R12-15-1302(E). The temporary rule does not contain such an exception.

The temporary rule provides that in appropriate cases, the director may require an applicant to submit a hydrological study addressing the effects of withdrawals from the proposed well on the migration of poor quality water. The proposed rule contains a similar provision. R12-15-1302(B)(3) provides that the director may require an applicant to submit a hydrological study demonstrating whether withdrawals from the proposed well will have the effect described in the subsection if the director determines that the study will assist the director in making a determination under the subsection. The proposed rule also provides that an applicant may voluntarily submit such a hydrological study. *Id.*

In implementing the temporary rule, ADWR has never denied an application for a well permit on the basis that the withdrawals from the proposed well would cause the migration of contaminated water to a well of record resulting in an unreasonable impact to the owner of the well of record. If ADWR has reason to believe that withdrawals from a proposed well would have such an impact, ADWR, in cooperation with ADEQ, works with the applicant to make changes to the location or construction of the well to avoid the unreasonable impact so that a well permit may be issued for the well. ADWR intends to continue this approach under the proposed rule. However, if it is clear that the withdrawals from a proposed well will likely have the effect described in R12-15-1302(B)(3), and the applicant cannot or will not change the location or construction of the well to avoid the effect, the director will deny the application.

Replacement wells in new locations

A replacement well in a new location is a replacement well that does not qualify as a replacement well in approximately the same location under proposed rule R12-15-1308. A replacement well in a new location must comply with the well spacing criteria in R12-15-1302(B). The temporary rule contains a provision stating that an application to drill a replacement well in a new location shall not be rejected on the ground that it will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if both of the following apply: (1) the operation of the replacement well will not

significantly impact any well of record not historically impacted by the original well; and (2) the replacement well's projected impact on neighboring wells will not exceed the historical impacts from the original well. ADWR has not implemented this provision of the temporary rule because of the difficulty in determining an original well's historical impacts on neighboring wells. For that reason, ADWR did not include this provision in the proposed rule.

ADWR recognizes, however, that there may be cases in which a person proposing to drill a replacement well in a new location can demonstrate that the impact of the withdrawals from the proposed well on surrounding land or other water users will be offset by the termination or reduction of withdrawals from the original well. R12-15-1302(C) therefore provides that when determining whether a proposed replacement well in a new location complies with the well spacing criteria in subsection (B), the director shall consider the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director. Under this provision, if an applicant proposes to drill a replacement well in a new location and the withdrawals from the well, when considered alone, would be found to cause unreasonable increasing damage due to impacts on a well of record or regional land subsidence, the applicant may qualify for a well permit by demonstrating that the impact will be offset by the termination or reduction of the withdrawals from the well being replaced.

Changes to the construction or operation of the proposed well to lessen the degree of impact

The temporary rule provides that an applicant may, at any time prior to a final determination, amend the application to change the location or pumping requirements of the proposed well to lessen the degree of impact on neighboring wells of record. This provision is carried forward in R12-15-1302(F) and expanded. Subsection (F) provides that prior to a final determination, the applicant may amend the application to change the location or pumping requirements of the proposed well to lessen the degree of impact on wells of record, as well as on regional land subsidence. Subsection (F) also provides that the applicant may agree to construct or operate the proposed well in a manner that lessens the degree of impact on wells of record or regional land subsidence without filing a new application. Any such agreement must be included as a condition in the well permit.

Under subsection (F), if a proposed well is initially determined to cause unreasonably increasing damage because of its impact on a well of record (either additional drawdown of water levels or migration of contaminated groundwater) or regional land subsidence, the applicant may change the location, construction or operation of the proposed well to lessen those impacts and avoid the unreasonable damage without withdrawing the application and submitting a new

application. This provides a benefit to applicants because if a new application is filed, the director must consider any impacts the proposed well may have on neighboring wells of record that came into existence between the date the original application was filed and the date the new application was filed.

R12-15-1303. Well Spacing Requirements – Applications for Recovery Well Permits Under A.R.S. § 45-834.01

A.R.S. § 45-834.01(B) provides that before recovering stored water from a well, a person must apply for and receive a recovery well permit from the director. Under A.R.S. § 45-834.01(B)(1), with certain exceptions, the director may issue a recovery well permit to an applicant only if the director determines that the proposed recovery of stored water will not unreasonably increase damage to surrounding land or other water users from the concentration of wells under rules adopted by the director. This requirement does not apply if the applicant is a city, town, private water company or irrigation district in an AMA and the application is for an existing well (generally, a well constructed before June 12, 1980) within the applicant's service area, or if the applicant is a multi-county water conservation district and the application is for an existing well within the district and within the groundwater basin or sub-basin in which the stored water is located. A.R.S. § 45-834.01(B)(2) and (3).

Proposed rule R12-15-1303 contains well spacing criteria for those applications for recovery well permits that must comply with well spacing requirements pursuant to A.R.S. § 45-834.01(B)(1). The well spacing criteria are identical to the well spacing criteria contained in proposed rule R12-15-1302 for applications for well permits under A.R.S. § 45-599, with the following exceptions:

1. R12-15-1303(B)(1) provides that an applicant for a recovery well permit shall submit with the application a hydrological study delineating those areas surrounding the proposed well in which the projected impacts on water levels will exceed 10 feet of additional drawdown after the first five years of the recovery of stored water from the proposed well. Proposed rule R12-15-1302 does not contain such a requirement for persons applying for well permits under A.R.S. § 45-599, although the rule provides that the director may require an applicant to submit such a hydrological study if the director determines that such a study will assist the director in making determination under the rule.

ADWR decided to require all persons applying for recovery well permits that are subject to the well spacing criteria to submit a hydrological study with the application for two reasons. First, the determination of the probable impacts of a proposed recovery well on surrounding water levels is often more complex than a determination of the probable impacts of a groundwater well on surrounding water levels, particularly if the proposed recovery well will be located in the area of impact of the stored water. ADWR has found that in most cases, the

hydrological study submitted by an applicant for a recovery well permit assists ADWR in determining the probable impacts of the proposed recovery well on surrounding water levels.

Second, ADWR is required to give public notice of an application for a recovery well permit after it is determined to be complete and correct, and any person may file an objection to the application. A.R.S. § 45-871.01(F). The grounds for objection are limited to whether the application meets the criteria for issuing a recovery well permit under A.R.S. § 45-834.01(B), which, for those application subject to well spacing requirements, includes the well spacing criteria adopted by the director. Id. ADWR believes that it is appropriate to require an applicant for a recovery well permit to submit a hydrological study demonstrating the probable impact of the proposed well on surrounding water levels so that the information will be available to members of the public when they review the application to determine whether to object to the application.

2. Proposed rule R12-15-1303 provides that in making a determination as to whether a proposed recovery well complies with the well spacing criteria, if the proposed recovery well will be located within the area of impact of an underground storage facility, the director shall take into account the effects of water storage at the facility on the proposed recovery of stored water from the recovery well if: (1) the applicant will account for all of the water recovered as water stored at the facility; and (2) the applicant submits a hydrological study

demonstrating those effects to the satisfaction of the director. Under this provision, an applicant may demonstrate that the recovery of stored water from a proposed recovery well will not cause an unreasonable impact on surrounding wells of record or regional land subsidence because the impacts of recovering water from the well will be offset by the storage of water at a nearby underground storage facility. ADWR currently allows applicants for recovery well permits to make such a demonstration. The inclusion of this provision is therefore consistent with ADWR's current practice.

R12-15-1304 Well Spacing Requirements – Wells Withdrawing Groundwater from the Little Colorado River Plateau Groundwater Basin for Transportation to Another Groundwater Basin Under A.R.S. § 45-544(B)(1)

In areas outside of AMAs, a person may not transport groundwater away from a groundwater basin unless the transportation is allowed under A.R.S. § 45-544(B). A.R.S. § 45-544(B)(1) provides that a person who at any time during the twelve months before January 1, 1991 was transporting groundwater away from the Little Colorado river plateau groundwater basin has the right to transport groundwater legally withdrawn from a well in that basin to another groundwater basin. A.R.S. § 45-544(D) provides that groundwater may be withdrawn from a well drilled in the Little Colorado river plateau groundwater basin after January 1, 1991 for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1) only if the location of the well complies with the rules adopted pursuant to A.R.S. § 45-

598(A) to prevent unreasonably increasing damage to surrounding land or other water users from the concentration of wells. This does not apply to a replacement well in approximately the same location or a well drilled after January 1, 1991 pursuant to a notice of intention to drill filed on or before that date.

Proposed rule R12-15-1304 contains well spacing criteria for any well drilled in the Little Colorado river plateau groundwater basin after January 1, 1991 that must comply with well spacing requirements pursuant to A.R.S. § 45-544(D) because it will be used to withdraw groundwater for transportation away from the basin. The well spacing criteria are identical to the well spacing criteria contained in proposed rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1305 Well Spacing Requirements – Applications to Use a Well to Withdraw Groundwater for Transportation to an Active Management Area Under A.R.S. § 45-559

A.R.S. § 45-559 provides that a person may not use a well constructed after September 21, 1991 to withdraw groundwater for transportation to an AMA pursuant to title 45, chapter 2, article 8.1, A.R.S., unless the person applies to the director for approval and the director approves the application. The statute provides that the director shall approve an application if the director determines that the withdrawals will not unreasonably increase damage to surrounding land

or other water users from the concentration of wells. The statute further provides that in making this determination, the director shall follow the criteria in the rules adopted pursuant to A.R.S. § 45-598(A).

Proposed rule R12-15-1305 contains well spacing criteria for applications to use a well constructed after September 21, 1991 for the withdrawal of groundwater for transportation to an AMA pursuant to A.R.S. § 45-559. The well spacing criteria are identical to the well spacing criteria contained in proposed rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1306 Well Spacing Requirements – Applications for Water Exchange Permits Under A.R.S. § 45-1041

A.R.S. § 45-1041(A) provides that, with certain exceptions, a person who seeks to give surface water, other than Colorado river water, in a water exchange shall apply to the director for a water exchange permit. The statute provides that the director shall issue a water exchange permit if the applicant demonstrates that certain conditions are met. One of the conditions is that if an applicant is not a city, town, private water company or irrigation district, any new or increased pumping by the applicant from a well within an AMA pursuant to the water exchange will not unreasonably increase damage to surrounding land or other water users. A.R.S. § 45-1041(A)(4).

Proposed rule R12-15-1306 contains well spacing criteria for those applications for a water exchange permit that are required to comply with well spacing requirements pursuant to A.R.S. § 45-1041(A)(4). The well spacing criteria are identical to the well spacing criteria contained in proposed rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1307. Well Spacing Requirements – Notices of Water Exchange under A.R.S. § 45-1051

A.R.S. § 45-1051(A) provides that, with certain exceptions, a person who seeks to engage in a water exchange for which a water exchange permit is not required must file a notice of water exchange with the director. A.R.S. § 45-1052 provides that after filing a notice of water exchange as required by A.R.S. § 45-1051(A), the exchange may be initiated if it satisfies certain conditions. One of the conditions is that for each participant that is not a city, town, private water company or irrigation district, any new or increased pumping by that person from a well within an AMA pursuant to the water exchange will not unreasonably increase damage to surrounding land or other water users. A.R.S. § 45-1052(4).

Proposed rule R12-15-1307 contains well spacing criteria for those notices of water exchange that are required to comply with well spacing requirements pursuant to A.R.S. § 45-1052(4). The well spacing criteria are identical to the

well spacing criteria contained in proposed rule R12-15-1302 for applications for well permits under A.R.S. § 45-599.

R12-15-1308. Replacement Wells in Approximately the Same Location

A.R.S. § 45-597 provides that a person entitled to withdraw groundwater in an AMA or a person entitled to recover stored water pursuant to A.R.S. § 45-834.01 may construct a replacement well in approximately the same location. A.R.S. § 45-544(D) provides that groundwater may be withdrawn from a well drilled in the Little Colorado river plateau groundwater basin after January 1, 1991 for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1) if the well is a replacement well in approximately the same location. A person proposing to drill a replacement well in approximately the same location must file a notice of intention to drill pursuant to A.R.S. § 45-596 prior to drilling the well, but is not required to comply with well spacing criteria. The well is deemed not to cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells because it will not cause a greater impact than the original well.

The director is required to adopt a rule defining what constitutes a replacement well, including the distance from the original well site that is deemed to be the same location for a replacement well. A.R.S. § 45-597(A). Proposed rule R12-15-1308 sets forth the criteria that a proposed well must meet to qualify as a

replacement well in approximately the same location. The criteria fall within three basic categories: the maximum distance the proposed replacement well may be from the original well; the maximum annual volume of water the proposed replacement well may withdraw; and the date by which a notice of intention to drill the replacement well must be filed. Each category is discussed below.

Maximum distance between proposed replacement well and original well

R12-15-1308(A)(1) restricts the location of a replacement well in approximately the same location to no greater than 660 from the original well. The rule requires that the location of the original well be capable of being determined at the time the notice of intention to drill the replacement well is filed. "Original well" is defined as the well being replaced by the replacement well, or, if the replacement well is the latest in a succession of two or more replacement wells in approximately the same location, the well replaced by the first replacement well. Defining "original well" in this manner will prevent a person from drilling a succession of replacement wells in approximately the same location, each of which is within 660 feet of the well it replaces, but with the second or subsequent well being drilled more than 660 feet from the first well that was replaced. Without restricting all of the replacement wells to within 660 feet of the first well that was replaced, successive replacement wells could ultimately be drilled several miles from the first well that was replaced without complying with the well spacing criteria.

The temporary rule also restricts a replacement well in approximately the same location to within 660 feet of the original well. However, the temporary rule does not define "original well," and does not require that the location of the original well be capable of being determined at the time the notice of intention to drill the replacement well is filed.

The 660-foot restriction in both the temporary rule and the proposed rule has a simple explanation and reasonable justification. ADWR's well registry database records a well's location using the cadastral system that is a standard coordinate system in common usage throughout the United States. The cadastral system is essentially equivalent to a legal description that specifies a well's location down to the ¼, ¼, ¼, section (this defines a 10 acre square-shaped area that measures 660 feet in length and width). The 660-foot criterion restricts the drilling of a replacement well in approximately the same location to the area generally encompassed within the original well's cadastral location (legal location). This is a reasonable, common sense approach to defining a replacement well in approximately the same location. ADWR is not aware of any occasions in which the 660-foot restriction has led to an unreasonable result during the approximately 23 years in which the temporary rule has been in effect.

Maximum annual volume of water that may be withdrawn

R12-15-1308(A)(2) through (A)(4) establish the maximum annual volume of water that may be withdrawn from a replacement well in approximately the same location. The purpose of these provisions is to ensure that a replacement well in approximately the same location does not withdraw more water than could have been withdrawn from the original well. This will prevent a replacement well in the approximately same location from having a greater impact on surrounding land and other water users than allowed by the original well.

Subsection (A)(2) applies in cases where the proposed well is replacing an original well that was not subject to a well permit under A.R.S. § 45-599 or a recovery well permit issued under A.R.S. § 45-834.01 in which an annual volume limit was established. In these cases, the amount of water that could be withdrawn from the original well was limited only by the maximum capacity of the original well, and not by a maximum annual volume established in a well permit or recovery well permit. For that reason, subsection (A)(2) restricts the annual volume of water that may be withdrawn from the replacement well in approximately the same location to the maximum annual capacity of the original well. The subsection provides that the director shall determine the maximum annual capacity of the original well by multiplying the maximum pump capacity of the well in gallons per minute by the number of minutes in a year (525,600), and then converting the result into acre-feet by dividing the result by 325,851 gallons. The result is the amount of water that would have been pumped from the

original well if it were operated at maximum capacity without interruption for an entire year.

Subsection (A)(2) provides that the director shall presume that the maximum pump capacity of the original well is the maximum pump capacity of the well in gallons per minute as shown in ADWR's well registration records. However, if the director has reason to believe that the maximum pump capacity as shown in ADWR's records is inaccurate, or if the applicant submits evidence demonstrating that the maximum pump capacity as shown in ADWR's records is inaccurate, the director shall determine the maximum pump capacity by considering all available evidence, including the depth and diameter of the original well and any evidence submitted by the applicant. If ADWR's well registration records do not show the maximum pump capacity of the original well, the director shall not approve the proposed well as a replacement well in approximately the same location unless the applicant demonstrates the maximum pump capacity of the original well to the director's satisfaction.

Subsection (A)(3) applies in cases where the proposed well will replace an original well for which a well permit was issued under A.R.S. § 45-599. Because the original well could not annually withdraw an amount of groundwater in excess of the maximum annual volume set forth in well permit, the subsection provides that the replacement well in approximately the same location may not annually

withdraw an amount of groundwater in excess of the maximum annual volume set forth in the well permit.

Subsection (A)(4) applies in cases where the proposed well will replace a well for which a recovery well permit was issued under A.R.S. § 45-834.01 and the permit sets forth a maximum annual volume of stored water that may be recovered from the well. Because the well to be replaced could not annually recover an amount of stored water in excess of the maximum annual volume set forth in the recovery well permit, the subsection provides that the replacement well in approximately the same location may not annually recover an amount of stored water in excess of the maximum annual volume set forth in the recovery well permit.

The maximum annual volume limitations set forth in subsections (A)(2), (A)(3) and (A)(4) are different than the maximum annual volume limitation in the temporary rule. The temporary rule provides that a proposed replacement well in approximately the same location may not annually withdraw an amount of groundwater in excess of the historical withdrawals from the original well. R12-15-840(1). In implementing the temporary rule, ADWR calculates the annual amount of water historically withdrawn from an original well as the volume of water that would be withdrawn from the well if it were operated at one-half of its maximum capacity during the year (i.e., a 50 per cent duty cycle), unless the applicant demonstrates that a larger volume was pumped in any year.

When developing the proposed rule, ADWR decided not to limit the volume of water that may be withdrawn from a replacement well in approximately the same location to the volume historically withdrawn from the original well. There were two reasons for this decision. First, it is difficult for many applicants to demonstrate the amount of water that was historically withdrawn from the original well. Although ADWR assumes that the original well was operated under a 50 per cent duty cycle if the applicant does not demonstrate that a larger volume was pumped in a year, such an assumption may not be realistic in all cases.

Second, by limiting the volume of water to the historical withdrawals from the original well, in many cases the replacement well will not be allowed to withdraw as much water as allowed by the original well. For example, under the temporary rule, if a well permit allowed the original well to withdraw 100 acre-feet per year, but the largest volume of water withdrawn from the well during a year was 70 acre-feet, the maximum volume of water that could be withdrawn from the replacement well would be 70 acre-feet per year (assuming that this was equal to or greater than the amount that would have been withdrawn from the well under a 50 per cent duty cycle). In this example, ADWR believes the replacement well should be allowed to withdraw 100 acre-feet per year because the original well was authorized to annually withdraw that volume and ADWR determined that such withdrawals would not cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells.

The proposed rule allows the replacement well to annually withdraw as much water as authorized by the original well. The stakeholders group strongly supported this approach.

Date by which notice of intention to drill replacement well must be filed

Subsection (A)(5) of the proposed rule provides that if the well to be replaced has been physically abandoned, a notice of intention to drill the proposed replacement well in approximately the same location must be filed no later than 90 days after the well to be replaced was physically abandoned. The temporary rule does not contain such a provision. However, in implementing the temporary rule, ADWR historically required an applicant to file a notice of intention to drill a replacement well in approximately the same location prior to physically abandoning the original well. ADWR based this policy on the principle that a proposed well cannot be considered a replacement well for a well that does not exist.

In developing the proposed rule, ADWR considered including a provision requiring that a person proposing to drill a replacement well in approximately the same location file a notice of intention to drill the replacement well before physically abandoning the well to be replaced. However, ADWR concluded that such a requirement is not appropriate in all cases, including cases where the original well must be abandoned in an expedited manner before the owner can file

a notice of intention to drill the replacement well. ADWR therefore decided to allow a person to file a notice of intention to drill a replacement well in approximately the same location within 90 days after the well to be replaced has been physically abandoned. ADWR determined that 90 days is a reasonable period of time.

This issue was discussed with the stakeholders group, and a majority of the stakeholders agreed that 90 days is a sufficient period of time after a well is abandoned to file a notice of intention to drill a replacement well in approximately the same location. The majority of the stakeholders agreed to a 90-day limit to ensure that a well that has been abandoned for a long period of time cannot be replaced with a well that could potentially create an impact that has not been experienced in the area for many years. Allowing a replacement well in approximately the same location to be drilled long after the original well was abandoned would create a hardship particularly on wells drilled in the area between the time the original well was abandoned and the replacement well was drilled.

Other provisions of the proposed rule

R12-15-1308(A)(6) provides that if the proposed replacement well in approximately the same location will be used to withdraw groundwater from the Little Colorado river plateau groundwater basin for transportation away from the

basin pursuant to A.R.S. § 45-544(B)(1), one of the following must apply: (1) the original well must have been drilled on or before January 1, 1991, or after that date pursuant to a notice of intention to drill that was on file with ADWR on that date; or (2) the director must have previously determined that the withdrawal of groundwater from the original well for transportation away from the Little Colorado river plateau groundwater basin complies with the well spacing requirements in R12-15-1304. The purpose of this provision is to ensure that a proposed well in the Little Colorado river plateau groundwater basin does not qualify as a replacement well in approximately the same location for purposes of withdrawing groundwater for transportation away from the basin unless the well it is replacing had the right to withdraw groundwater for that purpose.

R12-15-1308(B) provides that after a replacement well in approximately the same location is drilled, the replacement well may be operated in conjunction with the original well and any other wells that replaced the original well if the total amount of water withdrawn from all such wells does not exceed the maximum annual volume limitation set forth in subsection (A)(2), (A)(3) or (A)(4) of the rule. This provision applies in cases where the person proposing to drill a replacement well in approximately the same location desires to continue using the original well in addition to the replacement well. This may occur if the original well is still operable, but cannot produce a sufficient amount of water by itself to meet the person's water needs. In these cases, the person may operate the original well in conjunction with the replacement well in approximately the same location as long

as the total annual withdrawals from those wells do not exceed the maximum annual volume limitation established for the replacement well in approximately the same location in subsection (A) of the rule. The temporary rule contains a similar provision.

R12-15-1308(C) provides that a well may be drilled as a replacement well in approximately the same location for more than one original well if the criteria for a replacement well in approximately the same location are met with respect to each original well and if the total annual withdrawals from the proposed well will not exceed the combined maximum annual amounts allowed for each original well under subsection (A)(2), (A)(3) or (A)(4) of the rule. This provision was included at the suggestion of several stakeholders to allow a person to replace more than one original well with a single replacement well in approximately the same location. This could occur only in cases where the original wells are in close proximity to each other, because the replacement well must be located within 660 feet of each original well. The temporary rule does not contain such a provision.

R12-15-1308(D) provides that the director may include conditions in the approval of a notice of intention to drill a replacement well in approximately the same location to ensure that the drilling and operation of the replacement well meets the requirements of the rule. This will allow the director to include conditions in the approval of the notice of intention to drill a replacement well in approximately the

same location to ensure that well is drilled within 660 feet of the original well and that the person operating the well complies with the maximum annual volume limitations established in the rule. The temporary rule contains a similar provision.

6. A reference to any study relevant to the rule that the agency reviewed and either proposes to rely on in its evaluation of or justification for the rule or proposes not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

ADWR relied on the following study in deciding to include the 10-foot, five year drawdown criterion in proposed rules R12-15-1302 through R12-15-1307: Study dated March 30, 2005 by ADWR Hydrologists Frank Corkhill and Carol Norton entitled "Summary of Water Level Change Data in the Phoenix Active Management Area (1982/83 to 2002/03"). Any member of the public may obtain a copy of this summary and the data underlying the study by contacting:

Name:	Kathleen Donoghue
	Docket Supervisor
Address:	Arizona Department of Water Resources
	3550 N. Central Aves
	Phoenix, Arizona 85012
Telephone:	602-771-8472
Fax:	602-771-8683

7. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:

Not applicable.

8. The preliminary summary of the economic, small business, and consumer impact:

1. An Identification of the Proposed Rule Making

In this rulemaking proceeding, ADWR proposes to replace two temporary rules, rule R12-15-830 and rule R12-15-840, in effect since 1983, with proposed permanent rules R12-15-1301 through R12-15-1308. Both the temporary and proposed permanent rules address statutory mandates requiring the director to adopt rules to prevent unreasonably increasing damage to surrounding land or other water users from a concentration of wells, referred to as "well spacing rules," and a rule defining what constitutes a replacement well in approximately the same location. The proposed permanent rules can be categorized under five subheadings: definitions of terms used in the rules (R12-15-1301); rules relating to proposed new wells and replacement wells in new locations within AMAs for which a well permit is required under A.R.S. § 45-599 (R12-15-1302); rules relating to proposed recovery wells (R12-15-1303); rules relating to certain wells used for groundwater transportation and water exchanges (R12-15-1304 through

R12-15-1307); and a rule relating to replacement wells in approximately the same location (R12-15-1308).

The temporary rules contain well spacing criteria for proposed new wells and replacement wells in new locations within AMAs for which a well permit is required under A.R.S. § 45-599. The temporary rules also define what constitutes a replacement well in approximately the same location. The temporary rules do not address proposed recovery wells, wells used for groundwater transportation or wells used for water exchanges. When the temporary rules were adopted in 1983, the statutory provisions requiring these wells to comply with well spacing criteria did not exist. These wells are now addressed in rules R12-15-1303 through 1307.

Overall, ADWR believes the new rules are very similar to the temporary rules they replace. The new rules add clarity and certainty, remove sources of confusion and uncertain interpretation, codify some existing ADWR policies and slightly modify certain provisions in the temporary rules. The director will continue to deny authority to construct a well if the director determines it will cause unreasonably increasing damage to surrounding land or other water users from a concentration of wells.

The temporary rules and the proposed rule recognize three categories of unreasonably increasing damage: additional drawdown of water levels at neighboring wells of record; additional regional land subsidence; and migration of

contaminated groundwater. The provision in the proposed rule regarding additional regional land subsidence is nearly identical to the provision in the temporary rule. The provision in the proposed rule regarding migration of contaminated groundwater is similar to the provision in the temporary rule, but provides greater clarity on when an application will be denied on this basis. The language is consistent with current ADWR policy. The provision in the proposed rule regarding additional drawdown of water levels at neighboring wells of record is also similar to the provision in the temporary rules, with one exception. Under the temporary rules, if the probable additional drawdown is between 10 and 25 feet during the first five years of operation of the proposed well, ADWR will consider nine specified factors in determining whether to grant the application. The proposed rule eliminates the nine factors and simply requires ADWR to deny the application unless an exception applies.

The temporary rules provide that the director shall issue a well permit to an applicant even though the probable impact of the withdrawals from the proposed well on one or more wells of record will exceed the maximum allowable additional drawdown established in the rule if the applicant submits a signed consent form from the owner of each impacted well of record consenting to the withdrawals from the proposed well. The proposed rule retains this provision and extends its application to cases where withdrawals from the proposed well will likely cause unreasonably increasing damage to a well of record from the migration of contaminated groundwater. The proposed rule also allows an

applicant to obtain a well permit despite unreasonable impacts on a well of record if the applicant submits sufficient evidence that the address of the owner of the well of record as shown in ADWR's well records is inaccurate, and that the applicant made a reasonable attempt to locate the owner of the well of record, but was unable to do so.

The provision in the temporary rule requiring an applicant for a well permit to submit a hydrological study if the proposed pumping capacity exceeds 500 gmp or if the application is for multiple wells has been removed for most applicants, thereby relieving them from the economic burden of submitting such a study unless required by the director. For replacement wells in new locations, allowance is newly given in the proposed rule for the director to consider the collective effects of the reduction of pumping from the original well and the new withdrawals from proposed well if the applicant demonstrates those effects.

Regarding replacement wells in approximately the same location, both the proposed rules and the temporary rules limit the location of such wells to within 660 feet of the original well. The primary difference between the rules is that the proposed rules allow a replacement well in approximately the same location to withdraw up to the maximum capacity of the original well or, if a well permit or recovery well permit was issued for the original well, up to the permitted annual volume of the original well, while the temporary rule limits withdrawals to the historical withdrawals from the original well. This change will allow more water

to be withdrawn from a replacement well in approximately the same location in most cases, yet will prevent such a well from withdrawing more water than could have been withdrawn from the original well.

2. A Brief Summary of the Information Included in the Economic, Consumer, and Small Business Impact Statement

Proposed rules R12-15-1301 through 1308 will directly affect persons seeking to construct most non-exempt wells in AMAs, as well as certain recovery wells statewide. Persons owning certain wells in the Little Colorado river plateau groundwater basin, certain wells used to transport groundwater into an AMA and certain wells used to withdraw groundwater in AMAs for water exchanges may also be affected. The rules do not apply to persons drilling exempt wells in AMAs (generally, non-irrigation wells with a maximum pumping capacity of 35 gpm or less); persons drilling wells pursuant to groundwater withdrawal permits within AMAs, except general industrial user permits; or cities, towns, private water companies or irrigation districts applying for recovery well permits for wells within their service areas drilled before June 12, 1980. The rules also do not apply to wells that will withdraw only surface water.

Examples of persons who will be subject to the rules, depending on the type of well to be constructed or used by the person, include private individuals, groups of individuals, partnerships, or associations; industries, including manufacturing,

power plants, mines, golf courses, cattle feedlots, dairies, sand and gravel operations, and other industrial water users; businesses large and small, including farms, resorts, private water companies and homebuilders; political subdivisions including the State, cities, municipalities, towns, and irrigation districts; and Federal and state agencies.

Between 1983 and 2005, inclusive, ADWR estimates that approximately 1,156 wells were drilled under temporary rule R12-15-830, including both new wells and replacement wells in new locations. Between 1983 and 2005, inclusive, ADWR estimates that approximately 286 replacement wells in approximately the same location were drilled under temporary rule R12-15-840. Between 1983 and 2005, inclusive, ADWR estimates that approximately 212 recovery wells were drilled under recovery well authorities not existing in 1983. A recovery well may be also be permitted to withdraw groundwater, so that there is overlap between the number of recovery wells, new wells, and replacement wells.

3. Cost – Benefit Analysis

Throughout this analysis, ADWR treats the temporary rules as existing rules and bases economic impact from the proposed rules on changes from the existing rules.

ADWR estimates that economic impacts are minimal, and that any small direct incremental benefits – associated, for example, with added clarity, new maximum annual volume limits for replacement wells in approximately the same location, the ability of applicants for replacement wells in new locations to demonstrate the collective effects of the reduction of pumping from the well to be replaced and the new withdrawals from the proposed well, and the ability to obtain a well permit if the owner of an impacted well cannot be located – will generally outweigh even smaller incremental costs, if any.

Agencies

Agencies will benefit from clearer and more uniform and consistent definitions. Clearer detail is provided as to when the director "shall not approve" if a well of record is unreasonably impacted from the migration of contaminated groundwater. For new wells or replacement wells in new locations, confusion is reduced by eliminating a list of nine seldom used factors to be considered in determining whether an impact between 10 and 25 feet of additional drawdown is an unreasonable impact. ADWR estimates that it will incur no new appreciable direct costs or realize any benefits from the transition from the temporary rules to the permanent rules. Agencies that drill wells, e.g., ADOT, will incur the same costs and benefits as other well owners.

Political Subdivisions

Just as under the temporary rules, political subdivisions that own wells or land benefit from proposed new rules R12-15-1302 though 1308 in the same manner as other well owners: they are protected from unreasonably increasing damage to their wells and land from the concentration of wells. Without the rules, political subdivisions that own wells or land could be unreasonably damaged as a result of drawdown of groundwater levels, land subsidence, or migration of contaminated water to their wells. These potential negative impacts can lead to physical damage to structures, lowered property values or future treatment costs. In most cases, political subdivisions applying to construct new wells or replacement wells in new locations will no longer be required to submit a hydrological study for wells with a pumping capacity of 500 gmp or greater or for multiple wells. Under the proposed new rules, a hydrological study is required only for applications to drill certain recovery wells, although the director may require any applicant to submit such a study if the director determines that the study will assist the director in determining the impacts of the proposed withdrawals from the well.

Political subdivisions will likely incur costs to comply with proposed rules R12-15-1302 through 1307, but the costs are predicted to be reasonable and no different than the costs under temporary rule R12-15-830. Applicants for well permits who are required to conduct a hydrological study pay costs ranging between $2,000 and $5,000, in most cases.

Proposed rule R12-15-1308 defines a "replacement well in approximately the same location" as a well drilled no greater than 660 feet from an original well being replaced and that will not annually withdraw an amount of water in excess of the amount that could have been withdrawn from the original well. A hydrological study is not required. The rule provides a benefit when compared to the temporary rule in that the maximum annual amount of water that may be withdrawn from a replacement well in approximately the same location is greater under the proposed rule in most cases.

Business, Including Small Business

Just as under the temporary rules, businesses that own wells or land benefit from proposed new rules R12-15-1302 though 1308 in the same manner as other well owners: they are protected from unreasonably increasing damage to their wells and land from the concentration of wells. Without the rules, businesses that own wells or land could be unreasonably damaged as a result of drawdown of groundwater levels, land subsidence, or migration of contaminated water to their wells. Businesses applying to construct new wells or replacement wells in new locations are no longer required to prepare a hydrological study for wells with a maximum capacity of 500 gpm or greater or for multiple wells, unless the proposed well is a recovery well. However, the director may require any applicant to submit a hydrological study.

Under both the temporary and proposed permanent rules, a business with a proposed well qualifying as a "replacement well at approximately the same location" under R12-15-1308 avoids most costs associated with filing permit applications. Applicants for replacement wells in approximately the same location are required only to file a notice of intention to drill and pay a $150 fee. A hydrological study is not required.

Small businesses are impacted by the temporary and proposed permanent rules to the same extent as large business, political subdivisions, agencies, and other persons seeking to drill non-exempt wells. Small businesses, whether owning or seeking to drill wells, need to be protected from, or prevented from causing, unreasonably increasing damage to the same extent as other entities. It would not be legally permissible or fair to exempt small business applicants from these requirements.

Employment

Private hydrologic consultants often prepare the hydrological studies required by the temporary rules. Under the proposed rules, an applicant is not required to submit a hydrological study for any proposed well unless the proposed well is a recovery well or the director requires the applicant to submit a study. However, even if an applicant is not required to submit a hydrological study, the applicant may still choose to submit a study. Eliminating the requirement for most

applicants to submit a hydrological study may have a small effect on the employment of private hydrologic consultants. Otherwise, as a result of the adoption of proposed rules R12-15-1301 through 1308, ADWR anticipates no discernable new employment effects, whether private or public.

State Revenues

No difference between the proposed rules and the temporary rules.

Alternative Methods of Achieving the Proposed Rulemaking

ADWR engaged in a long public dialogue with the regulated community while preparing proposed rules R12-15-1301 through R12-15-1308. Many alternatives were considered, some less intrusive or costly, some more. The present proposed rules emerged from the public participation process, in preference to other alternatives.

9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:

Name: Mike Hanrahan

Address: 3550 N Central Ave

Phoenix, AZ 85012

Telephone: 602-771-8500

Fax: 602-771-8688

E-mail: mshanrahan@azwater.gov

10. The time, place, and nature of the proceedings for the making, amendment, or repeal of the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

A public hearing on the proposed rules will be held on March 6, 2006 at 10:00 a.m., at the offices of the Arizona Department of Water Resources, 3550 North Central Avenue, Phoenix, AZ 85012, second floor, Upper Verde and Middle Verde conference rooms.

Written comments will be accepted until March 6, 2006 at 5:00 p.m. Written comments should be addressed to:

Kathleen Donoghue, Docket Supervisor

Arizona Department of Water Resources

3550 North Central Avenue

Phoenix, AZ 85012

kadonoghue@azwater.gov

11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

None.

12. Incorporations by reference and their location in the rules:

None.

13. The full text of the rules follows:

TITLE 12. NATURAL RESOURCES

CHAPTER 15. DEPARTMENT OF WATER RESOURCES

ARTICLE 13. WELL SPACING REQUIREMENTS; REPLACEMENT WELLS IN APPROXIMATELY THE SAME LOCATION

ARTICLE 13. WELL SPACING REQUIREMENTS; REPLACEMENT WELLS IN APPROXIMATELY THE SAME LOCATION

R12-15-1301. Definitions

In addition to the definitions set forth in A.R.S. §§ 45-101, 45-402 and 45-591, the following words and phrases in this Article shall have the following meanings, unless the context otherwise requires:

1. "Abandoned well" means a well for which a well abandonment completion report has been filed pursuant to A.A.C. R12-15-816(E) or for which a notification of abandonment has been filed pursuant to A.A.C. R12-15-816(K).
2. "Additional drawdown" means a lowering in the water levels surrounding a well that is the result of the operation of the well and that is not attributable to existing regional rates of decline or existing impacts from other wells.
3. "Applicant" means any of the following:
    a. A person who has filed an application for a permit to construct a new well or a replacement well in a new location under A.R.S. § 45-599;
    b. A person who has filed an application for a recovery well permit under A.R.S. § 45-834.01 for a new well as defined in A.R.S. § 45-591 or, except as provided in A.R.S. § 45-834.01(B)(2) or (3), an existing well as defined in A.R.S. § 45-591;

c. A person who has filed an application for approval to use a well to withdraw groundwater for transportation to an active management area under A.R.S. § 45-559; or

d. A person, other than a city, town, private water company or irrigation district, who has filed an application for a water exchange permit under A.R.S. § 45-1041.

4. "ADEQ" means the Arizona Department of Environmental Quality.

5. "Contaminated groundwater" means groundwater that has been contaminated by a release of a hazardous substance, as defined in A.R.S. § 49-201, or a pollutant, as defined in A.R.S. § 49-201.

6. "DOD" means the United States Department of Defense.

7. "EPA" means the United States Environmental Protection Agency.

8. "LCR plateau groundwater transporter" means a person transporting groundwater from the Little Colorado River plateau groundwater basin to another groundwater basin pursuant to A.R.S. § 45-544(B)(1).

9. "Notice of water exchange participant" means a person, other than a city, town, private water company or irrigation district, named as a participant in a water exchange in a notice of water exchange filed under A.R.S. § 45-1051.

10. "Original well" means the well replaced by a replacement well in approximately the same location, except that if the replacement well is the latest in a succession of two or more wells drilled as replacement wells in approximately the same location under A.A.C. R12-15-1308 or temporary

rule R12-15-840 adopted by the director on March 11, 1983, "original well" means the well replaced by the first replacement well in approximately the same location.

11. "Remedial action site" means any of the following:

a. The site of a remedial action undertaken pursuant to the comprehensive environmental response, compensation, and liability act ("CERCLA") of 1980, as amended, United States Code § 9601, et seq., commonly known as a "superfund site."

b. The site of a corrective action undertaken pursuant to title 49, chapter 6, Arizona Revised Statutes, commonly known as a leaking underground storage tank ("LUST") site.

c. The site of a voluntary remediation action undertaken pursuant to title 49, chapter 1, article 5, Arizona Revised Statutes.

d. The site of a remedial action undertaken pursuant to title 49, chapter 2, article 5, Arizona Revised Statutes, commonly known as a water quality assurance revolving fund ("WQARF") site.

e. The site of a remedial action undertaken pursuant to the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6901, et seq.,

f. The site of remedial action undertaken pursuant to the Department of Defense Environmental Restoration Program, 10 U.S.C. § 2701, et seq., commonly known as a "Department of Defense site" or a "DOD site."

12. "Replacement well" means a well drilled for the purpose of replacing another well.

13. "Replacement well in a new location" means a replacement well that does not qualify as a replacement well in approximately the same location under R12-15-1308.

14. "Replacement well in approximately the same location" means a replacement well that qualifies as a replacement well in approximately the same location under A.A.C. R12-15-1308.

15. "Well" has the meaning prescribed in A.R.S. § 45-402. An abandoned well is not a well.

16. "Well of record" means, with respect to an applicant, an LCR plateau groundwater transporter or a notice of water exchange participant, any well or proposed well not owned by the applicant, LCR plateau groundwater transporter or notice of water exchange participant, or proposed to be drilled by the applicant, LCR plateau groundwater transporter or notice of water exchange participant, to which one of the following applies:

    a. The well is an existing well as defined in A.R.S. § 45-591 and the owner or operator has registered the well with the Department, unless the registration filing identifies the sole purpose or purposes of the well as one or more of the following:

        i. Cathodic protection;

        ii. Use as a sump pump or heat pump;

iii. Air sparging;

iv. Injection of liquids or gasses into the aquifer or vadose zone, including injection wells that are part of an underground storage facility permitted under title 45, chapter 3.1, A.R.S.;

v. Monitoring water levels or water quality, including a piezometer well;

vi. Obtaining geophysical, mineralogical or geotechnical data;

vii. Grounding; or

viii. Soil vapor extraction;

b. The well is a new well as defined in A.R.S. § 45-591 for which a notice of intention to drill was not filed pursuant to A.R.S. § 45-596 and for which a permit was not issued pursuant to A.R.S. §§ 45-599 or 45-834.01, and the owner or operator has registered the well with the Department, unless the registration filing identifies the sole purpose or purposes of the well as one or more of the purposes set forth in subsection (16)(a)(i) through (viii);

c. A filing has been made for the well pursuant to A.R.S. § 45-596(A) or (B), unless one of the following applies:

i. The filing has expired pursuant to A.R.S. § 45-596(E);

ii. The filing identifies the sole purpose or purposes of the well as one or more of the purposes set forth in subsection (16)(a)(i) through (viii); or

iii. The well is an exempt well and the director is prohibited by A.R.S. § 45-454(D)(4) from considering impacts on the well when determining whether to approve or reject a permit application filed under A.R.S. § 45-599;

d. An application for a permit to drill the well has been received by the Department pursuant to A.R.S. § 45-599, except any such application that has been denied after exhaustion of all administrative and judicial appeals and any such application for which the permit issued pursuant thereto has been revoked or has expired according to its terms or for failure to complete the well in a timely manner pursuant to A.R.S. § 45-599(G);

e. An application for a permit pursuant to A.R.S. §§ 45-514 or 45-516 has been received by the Department pursuant to A.R.S. § 45-521, except any such application that has been denied after exhaustion of all administrative and judicial appeals and any such application for which the permit issued pursuant thereto has been revoked or has expired according to its terms or for failure to complete the well before expiration of the drilling authority; or

f. An application for a permit to drill a recovery well has been received by the Department pursuant to A.R.S. § 45-834.01, except any such application that has been denied after exhaustion of all administrative and judicial appeals and any such application for which the permit issued pursuant thereto has been revoked or has

expired according to its terms or for failure to complete the well in a timely manner pursuant to A.R.S. § 45-834.01(F).

R12-15-1302. Well Spacing Requirements - Applications to Construct New Wells or Replacement Wells in New Locations Under A.R.S. § 45-599

A. The director shall not approve an application for a permit to construct a new well or a replacement well in a new location under A.R.S. § 45-599 if the director determines that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this section.

B. The director shall determine that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if one of the following applies:

1. Except as provided in subsection (D) of this section, the director determines that the probable impact of the withdrawals from the proposed well or wells on any well of record in existence as of the date of receipt of the application will exceed ten feet of additional drawdown after the first five years of operation of the proposed well or wells. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts on water levels will exceed

ten feet of additional drawdown after the first five years of operation of the proposed well or wells. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;

2. The director determines that the proposed well or wells will be located in an area of known land subsidence and the withdrawals from the proposed well or wells will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the withdrawals from the proposed well or wells on regional land subsidence. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (E) of this section, the director determines, after consulting with ADEQ, that withdrawals from the proposed well or wells will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence as of the date of the receipt of the application resulting in a degradation of the quality of the water withdrawn

from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under title 49, Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study demonstrating whether the withdrawals from the proposed well or wells will have the effect described in this subsection. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. In making a determination under subsection (B)(1), (B)(2) or (B)(3) of this section, if the proposed well is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed withdrawals from the replacement well if the applicant submits a hydrological study demonstrating those collective effects to the satisfaction of the director.

D. If the director determines under subsection (B)(1) of this section that the probable impact of the withdrawals from the proposed well or wells on one or more wells of record in existence as of the date of receipt of the

application will exceed ten feet of additional drawdown after the first five years of operation of the proposed well or wells, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals from the proposed well or wells. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. If the director determines that withdrawals from the proposed well or wells will have the effect described in subsection (B)(3) of this section on one or more wells of record in existence as of the date of receipt of the

application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals from the proposed well or wells. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

F. At any time prior to a final determination under this section, the applicant may:

1. Amend the application to change the location of the proposed well or wells or the amount of groundwater to be withdrawn from the

proposed well or wells to lessen the degree of impact on wells of record or regional land subsidence; or

2. Agree to construct or operate the proposed well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall include any such agreement as a condition in the well permit.

R12-15-1303. Well Spacing Requirements - Applications for Recovery Well Permits Under A.R.S. § 45-834.01

A. The director shall not approve an application for a recovery well permit under A.R.S. § 45-834.01 that is filed for a new well as defined in A.R.S. § 45-591 or, except as provided in A.R.S. § 45-834.01(B)(2) or (3), for an existing well as defined in A.R.S. § 45-591, if the director determines that the recovery of stored water from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this section.

B. The director shall determine that the recovery of stored water from the proposed well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if one of the following applies:

1. Except as provided in subsection (D) of this section, the director determines that the probable impact of the recovery of stored water from the proposed well or wells on any well of record in existence as of the date of receipt of the application will exceed ten feet of

additional drawdown after the first five years of the recovery of stored water from the proposed well or wells. To assist the director in making a determination under this subsection, the applicant shall submit with the application a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts on water levels will exceed ten feet of additional drawdown after the first five years of the recovery of stored water from the proposed well or wells;

2. The director determines that the proposed recovery well or wells will be located in an area of known land subsidence and the recovery of stored water from the proposed well or wells will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the recovery of stored water from the proposed recovery well or wells on regional land subsidence. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (E) of this section, the director determines, after consulting with ADEQ, that the recovery of stored water from the proposed well or wells will likely cause the

migration of contaminated groundwater from a remedial action site to a well of record in existence as of the date of receipt of the application resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under title 49, Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study demonstrating whether the recovery of stored water from the proposed well or wells will have the effect described in this subsection. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. In making a determination under subsection (B)(1), (B)(2) or (B)(3) of this section:

1. If the proposed recovery well is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the proposed recovery of stored water from the replacement well if the applicant submits a hydrological

study demonstrating those collective effects to the satisfaction of the director.

2. If the proposed recovery well will be located within the area of impact, as defined in A.R.S. § 45-802.01, of an underground storage facility and the applicant will account for all of the water recovered from the well as water stored at the facility, the director shall take into account the effects of water storage at the facility on the proposed recovery of stored water from the recovery well if the applicant submits a hydrological study demonstrating those effects to the satisfaction of the director.

D. If the director determines under subsection (B)(1) of this section that the probable impact of the recovery of stored water from the proposed recovery well or wells on any well of record in existence as of the date of receipt of the application will exceed ten feet of additional drawdown after the first five years of operation of the proposed well or wells, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the recovery of stored water from the proposed recovery well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this section if within 60 days after the date of the notice, or such longer time as

approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the recovery of stored water from the proposed recovery well or wells. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. If the director determines that the recovery of stored water from the proposed recovery well or wells will have the effect described in subsection (B)(3) of this section on one or more wells of record in existence as of the date of receipt of the application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the recovery of stored water from the proposed recovery well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this section if within 60 days after the date of the notice, or such longer time as

approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the recovery of stored water from the proposed recovery well or wells. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

F. At any time prior to a final determination under this section, the applicant may:

1. Amend the application to change the location of the proposed recovery well or wells or the amount of stored water to be recovered from the proposed recovery well or wells to lessen the degree of impact on wells of record or regional land subsidence; or

2. Agree to construct or operate the proposed recovery well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall include any such agreement as a condition in the recovery well permit.

R12-15-1304. Well Spacing Requirements - Wells Withdrawing Groundwater From the Little Colorado River Plateau Groundwater Basin for

Transportation to Another Groundwater Basin Under A.R.S. § 45-544(B)(1)

A. An LCR plateau groundwater transporter may not withdraw groundwater from a well or wells drilled in the Little Colorado river plateau groundwater basin after January 1, 1991, except a replacement well in approximately the same location or a well drilled after that date pursuant to a notice of intention to drill filed on or before that date, for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1) if the director determines that the withdrawals for that purpose will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this section.

B. The director shall determine that the withdrawals of groundwater from the well or wells will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if one of the following applies:

1. Except as provided in subsection (D) of this section, the director determines that the probable impact of the withdrawals of groundwater from the well or wells on any well of record in existence when the withdrawals commenced or are proposed to commence will exceed ten feet of additional drawdown after the first five years of the withdrawals. To assist the director in making a determination under this subsection, the LCR plateau groundwater transporter may submit to the director a hydrological

study delineating those areas surrounding the LCR plateau groundwater transporter's well or wells in which the projected impacts on water levels will exceed ten feet of additional drawdown after the first five years of the withdrawals. The director may require the LCR plateau groundwater to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;

2. The director determines that the well or wells from which the groundwater is withdrawn are located in an area of known land subsidence and the withdrawals of groundwater will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the LCR plateau groundwater transporter may submit to the director a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the withdrawals on regional land subsidence. The director may require the LCR plateau groundwater transporter to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (E) of this section, the director determines, after consulting with ADEQ, that the withdrawals of groundwater from the well or wells will likely cause the migration

of contaminated groundwater from a remedial action site to a well of record in existence when the groundwater withdrawals commenced or are proposed to commence resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under title 49, Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the LCR plateau groundwater transporter may submit to the director a hydrological study demonstrating whether the withdrawals of groundwater will have the effect described in this subsection. The director may require the LCR plateau groundwater transporter to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. In making a determination under subsection (B)(1), (B)(2) or (B)(3) of this section, if a well from which the groundwater is withdrawn is a replacement well in a new location, the director shall take into account the collective effects of reducing or terminating withdrawals from the well being replaced combined with the withdrawals from the replacement well

if the LCR plateau groundwater transporter submits a hydrological study demonstrating those collective effects to the satisfaction of the director.

D. If the director determines under subsection (B)(1) of this section that the probable impact of the withdrawals of groundwater from the well or wells on any well of record in existence when the withdrawals commenced or are proposed to commence will exceed ten feet of additional drawdown after the first five years of the withdrawals, the director shall notify the LCR plateau groundwater transporter in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the LCR groundwater transporter submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the LCR plateau groundwater

transporter made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. If the director determines that the withdrawals of groundwater from the well or wells will have the effect described in subsection (B)(3) of this section on one or more wells of record in existence when the groundwater withdrawals commenced or are proposed to commence, the director shall notify the LCR plateau groundwater transporter in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the withdrawals will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the LCR groundwater transporter submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the LCR plateau groundwater transporter made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

F. At any time prior to a final determination under this section, the LCR plateau groundwater transporter may agree to construct or operate the well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. Any such agreement shall be a condition for the use of the well or wells to withdraw groundwater for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1).

R12-15-1305. Well Spacing Requirements - Applications to Use a Well to Withdraw Groundwater for Transportation to an Active Management Area Under A.R.S. § 45-559

A. The director shall not approve an application to use a well or wells constructed after September 21, 1991 to withdraw groundwater for transportation to an active management area under A.R.S. § 45-559 if the director determines that the withdrawals for that purpose will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B) of this section.

B. The director shall determine that the withdrawals of groundwater will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells if one of the following applies:

1. Except as provided in subsection (C) of this section, the director determines that the probable impact of the groundwater withdrawals on any well of record in existence as of the date of receipt of the application will exceed ten feet of additional drawdown after the first five years of the withdrawals. To assist

the director in making a determination under this subsection, the applicant may submit a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts of the groundwater withdrawals on water levels will exceed ten feet of additional drawdown after the first five years of the withdrawals. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;

2. The director determines that the proposed well or wells will be located in an area of known land subsidence and the groundwater withdrawals will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the groundwater withdrawals on regional land subsidence. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (D) of this section, the director determines, after consulting with ADEQ, that the groundwater withdrawals will likely cause the migration of contaminated

groundwater from a remedial action site to a well of record in existence as of the date of receipt of the application resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under title 49, Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study demonstrating whether the groundwater withdrawals will have the effect described in this subsection. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection.

C. If the director determines under subsection (B)(1) of this section that the probable impact of the groundwater withdrawals on any well of record in existence as of the date of receipt of the application will exceed ten feet of additional drawdown after the first five years of the withdrawals, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the groundwater withdrawals will cause unreasonably increasing damage to

surrounding land or other water users from the concentration of wells under subsection (B)(1) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

D. If the director determines that the groundwater withdrawals will have the effect described in subsection (B)(3) of this section on one or more wells of record in existence as of the date of receipt of the application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the groundwater withdrawals will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the applicant

submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the withdrawals. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. At any time prior to a final determination under this section, the applicant may:

1. Amend the application to change the location of the proposed well or wells or the amount of groundwater to be withdrawn from the proposed well or wells to lessen the degree of impact on wells of record or regional land subsidence; or

2. Agree to construct or operate the proposed well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall include any such agreement as a condition in the permit to use the well or wells to withdraw groundwater for transportation to an active management area under A.R.S. § 45-559.

R12-15-1306. Well Spacing Requirements - Applications for Water Exchange Permits Under A.R.S. § 45-1041

A. The director shall not approve an application for a water exchange permit filed under A.R.S. § 45-1041 by a person other than a city, town, private water company or irrigation district if the director determines that any new or increased pumping by the applicant from a well or wells within an active management area pursuant to the water exchange will cause unreasonably increasing damage to surrounding land or other water users under subsection (B) of this section.

B. The director shall determine that new or increased pumping by the applicant from a well or wells within an active management area will cause unreasonably increasing damage to surrounding land or other water users if one of the following applies:

1. Except as provided in subsection (C) of this section, the director determines that the probable impact of the new or increased pumping on any well of record in existence as of the date of receipt of the application will exceed ten feet of additional drawdown after the first five years of the pumping. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study delineating those areas surrounding the proposed well or wells in which the projected impacts of the new or increased pumping on water levels will exceed ten feet of additional drawdown after the first five years of the pumping. The

director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;

2. The director determines that the new or increased pumping will occur in an area of known land subsidence and the pumping will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under this subsection, the applicant may submit a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the new or increased pumping on regional land subsidence. The director may require the applicant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (D) of this section, the director determines, after consulting with ADEQ, that the new or increased pumping will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence as of the date of receipt of the application resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be

prevented or adequately mitigated through the implementation of a program regulated under title 49, Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the applicant may submit with the application a hydrological study demonstrating whether the new or increased pumping will have the effect described in this subsection. If the applicant does not submit such a hydrological study with the application, the director may require the applicant to submit the study if the director determines that the study will assist the director in making a determination under this subsection.

C. If the director determines under subsection (B)(1) of this section that the probable impact of the new or increased pumping on any well of record in existence as of the date of receipt of the application will exceed ten feet of additional drawdown after the first five years of the pumping, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users under subsection (B)(1) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

D. If the director determines that the new or increased pumping will have the effect described in subsection (B)(3) of this section on one or more wells of record in existence as of the date of receipt of the application, the director shall notify the applicant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the applicant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the applicant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. At any time prior to a final determination under this section, the applicant may:

1. Amend the application to change the location of the proposed well or wells or the amount of the new or increase pumping to lessen the degree of impact on wells of record or regional land subsidence; or

2. Agree to construct or operate the proposed well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. The director shall include any such agreement as a condition in the water exchange permit.

R12-15-1307. Well Spacing Requirements - Notices of Water Exchange Under A.R.S. § 45-1051

A. A notice of water exchange participant may not participate in a water exchange for which a notice is filed under A.R.S. § 45-1051 if the director determines that any new or increased pumping by the person from a well or wells within an active management area pursuant to the water exchange will cause unreasonably increasing damage to surrounding land or other water users under subsection (B) of this section.

B. The director shall determine that new or increased pumping from the well or wells in an active management area will cause unreasonably increasing damage to surrounding land or other water users if one of the following applies:

1. Except as provided in subsection (C) of this section, the director determines that the probable impact of the new or increased pumping on any well of record in existence when the pumping commenced or is proposed to commence will exceed ten feet of additional drawdown after the first five years of the pumping. To assist the director in making a determination under this subsection, the notice of water exchange participant may submit to the director a hydrological study delineating those areas surrounding the notice of water exchange participant's well or wells in which the projected impacts of the new or increased pumping on water levels will exceed ten feet of additional drawdown after the first five years of the pumping. The director may require the notice of water exchange participant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection;

2. The director determines that the new or increased pumping is in an area of known land subsidence and the pumping will likely cause unreasonably increasing damage from additional regional land subsidence. To assist the director in making a determination under

this subsection, the notice of water exchange participant may submit to the director a hydrological study, which may include a geophysical evaluation, demonstrating the impact of the pumping on regional land subsidence. The director may require the notice of water exchange participant to submit such a hydrological study if the director determines that the study will assist the director in making a determination under this subsection; or

3. Except as provided in subsection (D) of this section, the director determines, after consulting with ADEQ, that the new or increased pumping will likely cause the migration of contaminated groundwater from a remedial action site to a well of record in existence when the pumping commenced or is proposed to commence resulting in a degradation of the quality of the water withdrawn from the well of record so that the water will no longer be usable for the purpose for which it is currently being used without additional treatment, and that the damage to the owner of the well of record will not be prevented or adequately mitigated through the implementation of a program regulated under title 49, Arizona Revised Statutes, or a program regulated by EPA or DOD. To assist the director in making a determination under this subsection, the notice of water exchange participant may submit to the director a hydrological study demonstrating whether the new or increased pumping will have the effect described in this

subsection. The director may require the notice of water exchange participant to submit such a study if the director determines that the study will assist the director in making a determination under this subsection.

C. If the director determines under subsection (B)(1) of this section that the probable impact of the new or increased pumping on any well of record in existence when the pumping commenced or is proposed to commence will exceed ten feet of additional drawdown after the first five years of the pumping, the director shall notify the notice of water exchange participant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(1) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the notice of water exchange participant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry

records is inaccurate and that the notice of water exchange participant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

D. If the director determines that the new or increased pumping will have the effect described in subsection (B)(3) of this section on one or more wells of record in existence when the pumping commenced or is proposed to commence, the director shall notify the notice of water exchange participant in writing of the location of the wells of record and the names and addresses of the owners of the wells as shown in the Department's well registry. The director shall not determine that the new or increased pumping will cause unreasonably increasing damage to surrounding land or other water users from the concentration of wells under subsection (B)(3) of this section if within 60 days after the date of the notice, or such longer time as approved by the director, the notice of water exchange participant submits one of the following for each well of record identified in the notice:

1. A signed and notarized consent form from the owner of the well of record consenting to the new or increased pumping. The consent form shall be prescribed and furnished by the director; or

2. Evidence satisfactory to the director that the address of the owner of the well of record as shown in the Department's well registry records is inaccurate and that the notice of water exchange

participant made a reasonable attempt to locate the current owner of the well of record but was unable to do so.

E. At any time prior to a final determination under this section, the notice of water exchange participant may agree to construct or operate the well or wells in a manner that lessens the degree of impact on wells of record or regional land subsidence. Any such agreement shall be a condition for the use of the well to pump water for the water exchange.

R12-15-1308. Replacement Wells in Approximately the Same Location

A. For purposes of A.R.S. §§ 45-544, 45-596 and 45-597, a replacement well in approximately the same location is a proposed well to which all of the following apply:

1. The proposed well will be located no greater than 660 feet from the original well, and the location of the original well can be determined at the time the notice of intention to drill the proposed well is filed;

2. Except as provided in subsections (A)(3) and (A)(4) of this section, the proposed well will not annually withdraw an amount of water in excess of the maximum annual capacity of the original well. The director shall determine the maximum annual capacity of the original well by multiplying the maximum pump capacity of the original well in gallons per minute by 525,600, and then converting the result into acre-feet by dividing the result by 325,851 gallons. The director shall presume that the maximum pump capacity of the

original well is the maximum pump capacity of the well in gallons per minute as shown in the Department's well registry records, except that:

a. If the director has reason to believe that the maximum pump capacity as shown in the Department's well registry records is inaccurate, or if the applicant submits evidence demonstrating that the maximum pump capacity as shown in the Department's well registry records is inaccurate, the director shall determine the maximum pump capacity by considering all available evidence, including the depth and diameter of the well and any evidence submitted by the applicant; or

b. If the Department's well registry records do not show the maximum pump capacity of the original well, the director shall not approve the proposed well as a replacement well in approximately the same location unless the applicant demonstrates to the director's satisfaction the maximum pump capacity of the original well;

3. If a well permit was issued for the original well under A.R.S. § 45-599, the proposed well will not annually withdraw an amount of groundwater in excess of the maximum annual volume set forth in the well permit;

4. If a recovery well permit was issued for the well to be replaced pursuant to A.R.S. § 45-834.01(B) and the permit sets forth a maximum annual volume of stored water that may be recovered from the well, the proposed well will not annually recover an amount of stored water in excess of the maximum annual volume set forth in the recovery well permit;

5. If the well to be replaced has been physically abandoned in accordance with A.A.C. R12-15-816, a notice of intention to drill the proposed well is filed no later than 90 days after the well to be replaced was physically abandoned; and

6. If the proposed well will be used to withdraw groundwater from the Little Colorado river plateau groundwater basin for transportation away from the basin pursuant to A.R.S. § 45-544(B)(1), one of the following applies:

   a. The original well was drilled on or before January 1, 1991 or was drilled after that date pursuant to a notice of intention to drill that was on file with the Department on that date; or

   b. The director previously determined that the withdrawal of groundwater from the original well for transportation away from the Little Colorado river plateau groundwater basin complies with A.A.C. R12-15-1304.

B. After a replacement well in approximately the same location is drilled, the replacement well may be operated in conjunction with the original well and any other wells that replaced the original well if the total annual withdrawals from all such wells do not exceed the maximum amount allowed under subsection (A)(2), (A)(3) or (A)(4) of this section, whichever applies.

C. A proposed well may be drilled as a replacement well in approximately the same location for more than one original well if the criteria in subsection (A)(1), (A)(5) and (A)(6) of this section are met with respect to each original well and if the total annual withdrawals from the proposed well will not exceed the combined maximum annual amounts allowed for each original well under subsections (A)(2), (A)(3) or (A)(4) of this section, whichever applies.

D. The director may include conditions in the approval of the notice of intention to drill the replacement well to ensure that the drilling and operation of the replacement well meets the requirements of this section.